



August 30, 2021

Federal Express

Air Enforcement Branch (3AP20)
United States Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Re: **Semiannual NSPS (Subpart VV, Subpart DDD)**

Braskem America, Inc.

Report Period: 2/1/2021 – 7/31/2021

- 1) Leak Detection and Repair (LDAR) Report
- 2) Periods when "Vent Stream Diverted from Control Device"
- 3) Periods when flare or pilot light was absent
- 4) Per 40 CFR §60.565(k); Notification of process operational changes that increased the uncontrolled annual emissions or the VOC weight percent of the individual stream.

Dear Sir or Madam:

Braskem America, Inc. located in Marcus Hook, PA hereby submits the above-mentioned NSPS semiannual reports for the above-referenced report period. The reports and supporting documentation are numbered below:

- 1) LDAR (*see attached*):
 - ✓ Process unit identification
 - ✓ Monthly leak information
 - ✓ Justification for delayed repairs
 - ✓ Dates of process unit shutdowns
 - ✓ Revisions to items submitted in the initial report
- 2) Periods when "Vent Stream Diverted from Control Device" (none to report).
- 3) Periods when the flare or pilot light was absent (none to report).
- 4) Notification of process operational changes that increased the uncontrolled annual emissions or the VOC weight percent of the individual stream (none to report).



Braskem has also confirmed with Energy Transfer Partners – Marcus Hook Industrial Complex that their flare which accepts Braskem materials had no periods of vent stream diversion from the control device and no periods when the flare or pilot light was absent during the reporting period.

If you have any questions, please contact our Environmental Engineer, Jeffrey Hirt at (610) 497-8229 or by e-mail at jeffrey.hirt@braskem.com.

Sincerely,

Braskem America, Inc.
Marcus Hook

A handwritten signature in blue ink that reads "Stephanie Whitesell". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

Stephanie Whitesell
Facility Manager

Attachments

cc: Mr. James Rebarchak, Program Manager
PADEP Bureau of Air Quality
Southeast Regional Office
jrebarchak@pa.gov

Jillian Gallagher, AQ Environmental Group Manager: jigallaghe@pa.gov

Kevin McLemore, AQ District Supervisor: kmclemore@pa.gov



Certification of Truth, Accuracy and Completeness

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in these reports is true, accurate, and complete.

A handwritten signature in blue ink that reads "Stephanie Whitesell". The signature is fluid and cursive, with the first name and last name clearly distinguishable.

Stephanie Whitesell
Braskem America, Inc.
Marcus Hook
Facility Manager

Revisions to Initial Report
As of 7/31/2021

	<i>Plant 1</i>	<i>Plant 2</i>	<i>Cavern</i>	<i>Poly</i>	<i>C-3</i>	<i>Lower #1</i>
VALVES*	1798	1522	627	2263	1196	47
PUMPS**	3	2	7	16	4	0
COMPRESSORS**	0	0	0	0	0	0

Red Font indicates a change from previous report period.

Notes:

* Total does not include components designated as no detectible emissions (NDE).

** Total does not include components designated as no detectible emissions (NDE) or those equipped with a closed vent loop system.

Totals do not include permanently inactive components.

Plant 1
Monitoring Period: 2/1/21 to 7/31/21

VALVES	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
Leaks Detected	0	3	0	0	6	2
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	1	0	4	1

PUMPS	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
Leaks Detected	0	0	0	0	0	1
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
Dates of Process Unit Shutdowns	None	None	None	None	None	None

Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

Plant 2
Monitoring Period: 2/1/21 to 7/31/21

VALVES	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
Leaks Detected	1	7	1	4	3	2
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	1	0	0	1	0

PUMPS	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
Dates of Process Unit Shutdowns	None	None	None	5/23 - 5/25	None	7/26 - 7/29

Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

Cavern #4
Monitoring Period: 2/1/21 to 7/31/21

VALVES	<i>February 2021</i>	<i>March 2021</i>	<i>April 2021</i>	<i>May 2021</i>	<i>June 2021</i>	<i>July 2021</i>
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS	<i>February 2021</i>	<i>March 2021</i>	<i>April 2021</i>	<i>May 2021</i>	<i>June 2021</i>	<i>July 2021</i>
Leaks Detected	0	1	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS	<i>February 2021</i>	<i>March 2021</i>	<i>April 2021</i>	<i>May 2021</i>	<i>June 2021</i>	<i>July 2021</i>
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	<i>February 2021</i>	<i>March 2021</i>	<i>April 2021</i>	<i>May 2021</i>	<i>June 2021</i>	<i>July 2021</i>
Dates of Process Unit Shutdowns	None	None	None	None	None	None

Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.
- ** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.

15-2 Poly
Monitoring Period: 2/1/21 to 7/31/21

VALVES	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
Leaks Detected	0	0	0	0	0	2
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	2
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	1

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns	None	None	None	None	None	None
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Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown, or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR, in which case one of the pumps must operate while the other is awaiting repair.

C-3 Rack (H-5)
Monitoring Period: 2/1/21 to 7/31/21

	February 2021	March 2021	April 2021	May 2021	June 2021	July 2021
VALVES						
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS						
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS						
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS						
Dates of Process Unit Shutdowns	None	None	None	None	None	None

Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.

Lower #1
Monitoring Period: 2/1/21 to 7/31/21

VALVES	<i>February 2021</i>	<i>March 2021</i>	<i>April 2021</i>	<i>May 2021</i>	<i>June 2021</i>	<i>July 2021</i>
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS						
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair	0	0	0	0	0	0

COMPRESSORS						
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS						
Dates of Process Unit Shutdowns	None	None	None	None	None	None

Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown, or, they were isolated from VOC service.



September 29, 2021

Federal Express

James Rebarchak, *Regional Manager*
PADEP Bureau of Air Quality
Southeast Regional Office
2 East Main Street
Norristown, PA 19401

Re: Title V Semi-Annual Deviation Report

Braskem America, Inc.
TVOP 23-00012

Report Period: 1/1/2021 – 6/30/2021

Dear Mr. Rebarchak:

Braskem America, Inc. hereby submits the required semiannual deviation report for the above-referenced report period. This attached report is required by our Title V Permit Section B Condition #025, Section C Condition #011, and pursuant to 25 Pa. Code §127.511(c).

If you have any questions, please contact Jeffrey Hirt, Environmental Engineer, at (610) 497-8229 or by e-mail at Jeffrey.Hirt@Braskem.com.

Sincerely,

BRASKEM AMERICA, INC.

A handwritten signature in blue ink that reads "Stephanie Whitesell".

Stephanie Whitesell
Facility Manager



**PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY
COMPLIANCE CERTIFICATION FORM**

(25 Pa. Code § 127.513)

Facility Name:	Braskem America, Inc.	Plant Name:	Braskem – Marcus Hook
Contact Person:	Jeffrey Hirt	Title:	Environmental Engineer
Operating Permit #:	23-00012	Phone Number:	610-497-8229

For the period 1/1/2021 – 6/30/2021, Braskem America, Inc. has been in continuous compliance with all applicable requirements of permit # 23-00012 (Issue date of March 2, 2020), determined by the method(s) of compliance specified in said permit, except for the following deviations, exceedances and excursions:

Sect/Cond #	Citation #	Source	Noncompliance	Monitoring Method(s)	Date	Duration	Corrective Action(s)
N/A	N/A	N/A	No deviations to report during this period.	Title V reasonable inquiry process.			N/A

Certification of Truth, Accuracy and Completeness

Subject to the penalties of Title 18 Pa. C.S. Section 4904 and 35 P.S. Section 4009 (b) (2), I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this form are true, accurate, and complete.

Name:	Stephanie Whitesell	Title:	Facility Manager
Signed:	<i>Stephanie Whitesell</i>	Date:	09/29/21

This certification must be signed by a responsible official. Any certification submitted without a valid signature will be returned. The owner/operator shall identify any other material information needed in this certification to also comply with section 113(c)(2) of the Clean Air Act. If more spaces are needed, complete additional pages using the format shown in Addendum 1. This certification does not replace requirements pertaining to the submission of malfunction and CEM reports. DO NOT include that information on this form.



Braskem America, Inc.
 Marcus Hook Plant
 750 W. 10th Street
 Marcus Hook, PA 19061
 www.braskem.com

Braskem

February 26, 2016

Federal Express

Air Enforcement Branch (3AP20)
 United States Environmental Protection Agency
 Region 3
 1650 Arch Street
 Philadelphia, PA 19103-2029

RECEIVED

FEB 29 2016

Air Protection Division

Re: Semiannual NSPS (Subpart VV) Report Submissions:
 Braskem America, Inc.

- 1) *Leak Detection and Repair (LDAR) Report*
- 2) Periods when "Vent Stream Diverted from Control Device"
- 3) Periods when flare or pilot light was absent

Report Period: 7/1/2015 – 1/31/2016

Dear Sir or Madam:

Braskem America, Inc. located in Marcus Hook, PA hereby submits the above-mentioned NSPS semiannual reports for the above-referenced report period. The reports and supporting documentation are numbered below:

- 1) LDAR (*see attached*):
 - ✓ Process unit identification
 - ✓ Monthly leak information
 - ✓ Justification for delayed repairs
 - ✓ Dates of process unit shutdowns
 - ✓ Revisions to items submitted in the initial report
- 2) Periods when "Vent Stream Diverted from Control Device" (none to report).
- 3) Periods when the flare or pilot light was absent (none to report).

Braskem has also confirmed with Sunoco Logistics – Marcus Hook Industrial Complex that their flare which accepts Braskem materials had no periods of vent stream diversion from the control device and no periods when the flare or pilot light was absent during the reporting period.

If you have any questions, please contact our Environmental Engineer, Jeffrey Hirt at (610) 497-8229 or by e-mail at jeffrey.hirt@braskem.com.



Braskem America, Inc.
Marcus Hook Plant
750 W. 10th Street
Marcus Hook, PA 19061
www.braskem.com



Sincerely,

Braskem America, Inc.
Marcus Hook

Conway Yee
Facility Manager

Attachments

CC: Mr. James Rebarchak, Program Manager
PADEP Bureau of Air Quality
Southeast Regional Office
2 East Main Street
Norristown, PA 19401-4915



Braskem America, Inc.
Marcus Hook Plant
750 W. 10th Street
Marcus Hook, PA 19061
www.braskem.com



Certification of Truth, Accuracy and Completeness

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in these reports is true, accurate, and complete.

Conway Yee
Braskem America, Inc.
Marcus Hook
Facility Manager

Revisions to Initial Report
As of 1/31/2016

	<i>Plant 1</i>	<i>Plant 2</i>	<i>Cavern</i>	<i>Poly</i>	<i>C-3</i>	<i>Lower #1</i>
VALVES*	1751	1479	624	2142	915	47
PUMPS**	0	0	2	0	0	0
COMPRESSORS**	0	0	0	0	0	0

Red Font indicates a change from previous report period.

Notes:

* Total does not include components designated as no detectible emissions (NDE).

** Total does not include components designated as no detectible emissions (NDE) or those equipped with a closed vent system.

Totals do not include permanently inactive components.

Plant 1
Monitoring Period: 8/1/2015 to 1/31/2016

VALVES	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	18	3	3	14	1	5
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	5	0	0	0	2	0

PUMPS	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Dates of Process Unit Shutdowns**	None	None	None	None	None	None

Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Only a portion of the plant was shutdown on the dates listed.

Plant 2
Monitoring Period: 8/1/2015 to 1/31/2016

VALVES	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	14	2	3	10	0	2
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	3	0	1	1	1	0

PUMPS	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Dates of Process Unit Shutdowns**	None	None	10/20-10/22	None	None	1/30-2/4

Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Only a portion of the plant was shutdown on the dates listed.

15-2 Poly
Monitoring Period: 8/1/2015 to 1/31/2016

VALVES	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	2	3	16	1	0	7
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	1	0	1	0	0	0

PUMPS	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	1	1	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Dates of Process Unit Shutdowns***	8/31/15	None	None	None	None	None

Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.
- ** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.
- *** Only a portion of the plant was shutdown on the dates listed.

Cavern #4
Monitoring Period: 8/1/2015 to 1/31/2016

VALVES	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	0	9	1	0	5	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	1	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns***	None	None	None	None	None	None
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Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.

*** Only a portion of the plant was shutdown on the dates listed.

C-3 Rack (H-5)
Monitoring Period: 8/1/2015 to 1/31/2016

VALVES	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	1	6	0	0	1	1
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns***	None	None	None	None	None	None
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Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.

*** Only a portion of the plant was shutdown on the dates listed.

Lower #1
Monitoring Period: 8/1/2015 to 1/31/2016

VALVES	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016
Leaks Detected	0	0	1	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns**	None	None	None	None	None	None
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Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

- ** Only a portion of the plant was shutdown on the dates listed.

Kris

42-045-00164.



August 29, 2016

Federal Express

Air Enforcement Branch (3AP20)
United States Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

RECEIVED

SEP 01 2016

Air Protection Division

Re: Semiannual NSPS (Subpart VV, Subpart DDD)
Report Period: 2/1/2016 – 7/31/2016
Report Submissions Braskem America, Inc:
1) Leak Detection and Repair (LDAR) Report
2) Periods when "Vent Stream Diverted from Control Device"
3) Periods when flare or pilot light was absent

Dear Sir or Madam:

Braskem America, Inc. located in Marcus Hook, PA hereby submits the above-mentioned NSPS semiannual reports for the above-referenced report period. The reports and supporting documentation are numbered below:

- 1) LDAR (*see attached*):
 - ✓ Process unit identification
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 - ✓ Justification for delayed repairs
 - ✓ Dates of process unit shutdowns
 - ✓ Revisions to items submitted in the initial report
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- 3) Periods when the flare or pilot light was absent (none to report).

Braskem has also confirmed with Sunoco Logistics – Marcus Hook Industrial Complex that their flare which accepts Braskem materials had no periods of vent stream diversion from the control device and no periods when the flare or pilot light was absent during the reporting period.

If you have any questions, please contact our Environmental Engineer, Jeffrey Hirt at (610) 497-8229 or by e-mail at jeffrey.hirt@braskem.com.
Sincerely,



Braskem America, Inc.
Marcus Hook

A handwritten signature in blue ink, appearing to read 'Conway Yee'.

Conway Yee
Facility Manager

Attachments

cc: Mr. James Rebarchak, Program Manager
PADEP Bureau of Air Quality
Southeast Regional Office
2 East Main Street
Norristown, PA 19401-4915



Certification of Truth, Accuracy and Completeness

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in these reports is true, accurate, and complete.



Conway Yee
Braskem America, Inc.
Marcus Hook
Facility Manager

Revisions to Initial Report
As of 7/31/2016

	<i>Plant 1</i>	<i>Plant 2</i>	<i>Cavern</i>	<i>Poly</i>	<i>C-3</i>	<i>Lower #1</i>
VALVES*	1734	1462	617	2173	998	47
PUMPS**	0	0	0	0	0	0
COMPRESSORS**	0	0	0	0	0	0

Red Font indicates a change from previous report period.

Notes:

* Total does not include components designated as no detectible emissions (NDE).

** Total does not include components designated as no detectible emissions (NDE) or those equipped with a closed vent system.

Totals do not include permanently inactive components.

Plant 1
Monitoring Period: 2/1/2016 to 7/31/2016

VALVES	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016
Leaks Detected	27	4	0	17	1	1
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	2	3	0	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns**	2/16 - 2/19	None	4/11 -4/14	5/9-5/16	None	7/17-7/21
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Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Only a portion of the plant was shutdown on the dates listed.

Plant 2
Monitoring Period: 2/1/2016 to 7/31/2016

VALVES	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016
Leaks Detected	18	2	0	26	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	2	0	0	5	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns**	1/30-2/4	None	None	None	None	None
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Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

- ** Only a portion of the plant was shutdown on the dates listed.

Cavern #4
Monitoring Period: 2/1/2016 to 7/31/2016

VALVES	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016
Leaks Detected	0	8	0	0	5	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns***	None	None	None	None	None	None
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Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.

*** Only a portion of the plant was shutdown on the dates listed.

15-2 Poly
Monitoring Period: 2/1/2016 to 7/31/2016

VALVES	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016
Leaks Detected	0	1	30	0	1	21
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	1	0	1	0

PUMPS

Leaks Detected	0	0	0	0	0	1
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns***	None	None	None	None	None	None
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Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.
- ** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.
- *** Only a portion of the plant was shutdown on the dates listed.

C-3 Rack (H-5)
Monitoring Period: 2/1/2016 to 7/31/2016

VALVES	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016
Leaks Detected	0	6	0	0	6	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns***	None	None	None	None	None	None
------------------------------------	------	------	------	------	------	------

Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.

*** Only a portion of the plant was shutdown on the dates listed.

Lower #1
Monitoring Period: 2/1/2016 to 7/31/2016

VALVES	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns**	None	None	None	None	None	None
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Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

- ** Only a portion of the plant was shutdown on the dates listed.

42-045-00164

Evan Malone

MAR 1 2017



February 28, 2017

Via Federal Express

Air Enforcement Branch (3AP20)
United States Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

Re: **Semiannual NSPS (Subpart VV, Subpart DDD)**
Braskem America, Inc.

Report Period: 7/1/2016 – 1/31/2017

- 1) Leak Detection and Repair (LDAR) Report
- 2) Periods when "Vent Stream Diverted from Control Device"
- 3) Periods when flare or pilot light was absent

Dear Sir or Madam:

Braskem America, Inc. located in Marcus Hook, PA hereby submits the above-mentioned NSPS semiannual reports for the above-referenced report period. The reports and supporting documentation are numbered below:

- 1) LDAR (*see attached*):
 - ✓ Process unit identification
 - ✓ Monthly leak information
 - ✓ Justification for delayed repairs
 - ✓ Dates of process unit shutdowns
 - ✓ Revisions to items submitted in the initial report
- 2) Periods when "Vent Stream Diverted from Control Device" (none to report).
- 3) Periods when the flare or pilot light was absent (none to report).

Braskem has also confirmed with Sunoco Logistics – Marcus Hook Industrial Complex that their flare which accepts Braskem materials had no periods of vent stream diversion from the control device and no periods when the flare or pilot light was absent during the reporting period.

If you have any questions, please contact our Environmental Engineer, Jeffrey Hirt at (610) 497-8229 or by e-mail at jeffrey.hirt@braskem.com.



Sincerely,

Braskem America, Inc.
Marcus Hook

A handwritten signature in blue ink, appearing to read "Conway Yee".

Conway Yee
Facility Manager

Attachments

cc: Mr. James Rebarchak, Program Manager
PADEP Bureau of Air Quality
Southeast Regional Office
2 East Main Street
Norristown, PA 19401-4915



Certification of Truth, Accuracy and Completeness

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in these reports is true, accurate, and complete.

A handwritten signature in blue ink, appearing to read 'Conway Yee', is written over a horizontal line.

Conway Yee
Braskem America, Inc.
Marcus Hook
Facility Manager

Revisions to Initial Report
As of 1/31/2017

	<i>Plant 1</i>	<i>Plant 2</i>	<i>Cavern</i>	<i>Poly</i>	<i>C-3</i>	<i>Lower #1</i>
VALVES*	1737	1470	632	2194	1106	47
PUMPS**	0	0	0	0	0	0
COMPRESSORS**	0	0	0	0	0	0

Red Font indicates a change from previous report period.

Notes:

* Total does not include components designated as no detectible emissions (NDE).

** Total does not include components designated as no detectible emissions (NDE) or those equipped with a closed vent loop system.

Totals do not include permanently inactive components.

Plant 1
Monitoring Period: 8/1/2016 to 1/31/2017

VALVES	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	32	6	0	32	4	4
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	2	2	0	0	1	0

PUMPS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Dates of Process Unit Shutdowns**	None	None	10-15-16 through 10-31-16	11-1-16 through 11-13-16	12/26/16 through 12/27/16	None

Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown, or, they were isolated from VOC service.

** Plant shutdown 10/15/16 to 11/13/16 for Turnaround Work

Plant 2
Monitoring Period: 8/1/2016 to 1/31/2017

VALVES	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	21	3	0	26	2	1
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Dates of Process Unit Shutdowns**	None	None	10-15-16 through 10-31-16	11-1-16 through 11-13-16	None	None

Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown, or, they were isolated from VOC service.
- ** Plant shutdown 10/15/16 to 11/13/16 for Turnaround Work

Cavern #4
Monitoring Period: 8/1/2016 to 1/31/2017

VALVES	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	8	0	0	13	2
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Dates of Process Unit Shutdowns***	None	None	10-15-16 through 10-31-16	11-1-16 through 11-13-16	None	None

Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.

*** Plant shutdown 10/15/16 to 11/13/16 for Turnaround Work

C-3 Rack (H-5)
Monitoring Period: 8/1/2016 to 1/31/2017

VALVES	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	6	0	0	16	1
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0
PUMPS						
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0
COMPRESSORS						
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0
PROCESS UNIT SHUTDOWNS						
Dates of Process Unit Shutdowns***	None	None	10-15-16 through 10-31-16	11-1-16 through 11-13-16	None	None

Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.
- ** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.
- *** Plant shutdown 10/15/16 to 11/13/16 for Turnaround Work.

Lower #1
Monitoring Period: 8/1/2016 to 1/31/2017

VALVES	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	1
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair	0	0	0	0	0	0

COMPRESSORS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Dates of Process Unit Shutdowns**	None	None	10-15-16 through 10-31-16	11-1-16 through 11-13-16	None	None

Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown, or, they were isolated from VOC service.
- ** Plant shutdown 10/15/16 to 11/13/16 for Turnaround Work

15-2 Poly
Monitoring Period: 8/1/2016 to 1/31/2017

VALVES	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	1	7	19	0	1	19
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	4	0	0	0

PUMPS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS	August 2016	September 2016	October 2016	November 2016	December 2016	January 2017
Dates of Process Unit Shutdowns***	None	None	10-15-16 through 10-31-16	11-1-16 through 11-13-16	None	None

Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.
- ** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.
- *** Plant shutdown 10/15/16 to 11/13/16 for Turnaround Work



August 31, 2017

SEP 01 2017

Via Federal Express

Air Enforcement Branch (3AP20)
United States Environmental Protection Agency
Region 3
1650 Arch Street
Philadelphia, PA 19103-2029

SEP 01 2017

Re: **Semiannual NSPS (Subpart VV, Subpart DDD)**
Braskem America, Inc.
Report Period: 2/1/17 to 7/31/17

Dear Sir or Madam:

Braskem America, Inc. located in Marcus Hook, PA hereby submits the above-mentioned NSPS semiannual reports for the above-referenced report period. The reports and supporting documentation are numbered below:

- 1) LDAR (*see attached*):
 - ✓ Process unit identification
 - ✓ Monthly leak information
 - ✓ Justification for delayed repairs
 - ✓ Dates of process unit shutdowns
 - ✓ Revisions to items submitted in the initial report
- 2) Periods when "Vent Stream Diverted from Control Device" (none to report).
- 3) Periods when the flare or pilot light was absent (none to report).

Braskem has also confirmed with Sunoco Logistics – Marcus Hook Industrial Complex that their flare which accepts Braskem materials had no periods of vent stream diversion from the control device and no periods when the flare or pilot light was absent during the reporting period.

If you have any questions, please contact our Environmental Engineer, Jeffrey Hirt at (610) 497-8229 or by e-mail at jeffrey.hirt@braskem.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jeffrey Hirt".

Braskem America, Inc.



Marcus Hook

A handwritten signature in blue ink, appearing to read 'Conway Yee', is written over the printed name.

Conway Yee
Facility Manager

Attachments

cc: Mr. James Rebarchak, Program Manager
PADEP Bureau of Air Quality
Southeast Regional Office
2 East Main Street
Norristown, PA 19401-4915



Certification of Truth, Accuracy and Completeness

I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in these reports is true, accurate, and complete.

A handwritten signature in blue ink, appearing to read "C. Yee", written over a horizontal line.

Conway Yee
Braskem America, Inc.
Marcus Hook
Facility Manager

Revisions to Initial Report
As of 7/31/2017

	<i>Plant 1</i>	<i>Plant 2</i>	<i>Cavern</i>	<i>Poly</i>	<i>C-3</i>	<i>Lower #1</i>
VALVES*	1758	1481	638	2229	1111	47
PUMPS**	0	0	0	0	0	0
COMPRESSORS**	0	0	0	0	0	0

Red Font indicates a change from previous report period.

Notes:

* Total does not include components designated as no detectible emissions (NDE).

** Total does not include components designated as no detectible emissions (NDE) or those equipped with a closed vent loop system.

Totals do not include permanently inactive components.

Plant 1

Monitoring Period: 2/1/17 to 7/31/17

VALVES	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017
Leaks Detected	31	2	4	16	2	2
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	1	0	1	0	0	1

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns	None	None	None	None	None	None
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Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

Plant 2

Monitoring Period: 2/1/17 to 7/31/17

VALVES	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017
Leaks Detected	15	5	3	14	2	2
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	1	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns	None	None	None	None	None	None
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Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

Cavern #4
Monitoring Period: 2/1/17 to 7/31/17

VALVES	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017
Leaks Detected	1	13	0	0	7	1
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns	None	None	None	None	None	None
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Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.

15-2 Poly
Monitoring Period: 2/1/17 to 7/31/17

VALVES	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017
Leaks Detected	4	0	33	0	3	17
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	1	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns	None	None	None	None	None	None
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Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR, in which case one of the pumps must operate while the other is awaiting repair.

C-3 Rack (H-5)
Monitoring Period: 2/1/17 to 7/31/17

VALVES	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017
Leaks Detected	1	10	1	1	8	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair**	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns	None	None	None	None	None	None
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Notes:

* For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown, or, they were isolated from VOC service.

** Pumps placed on delay of repair are isolated from VOC service while awaiting repair unless the backup pump is also on DOR; in which case one of the pumps must operate while the other is awaiting repair.

Lower #1

Monitoring Period: 2/1/17 to 7/31/17

VALVES	February 2017	March 2017	April 2017	May 2017	June 2017	July 2017
Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PUMPS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair	0	0	0	0	0	0

COMPRESSORS

Leaks Detected	0	0	0	0	0	0
Leaks Not Repaired Within 15 Days	0	0	0	0	0	0
Components Placed on Delay of Repair*	0	0	0	0	0	0

PROCESS UNIT SHUTDOWNS

Dates of Process Unit Shutdowns	None	None	None	None	None	None
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Notes:

- * For components placed on delay of repair during this reporting period, replacement of the component was required. Either, it was not possible to isolate these components from the process, therefore, they cannot be replaced until the next process unit shutdown; or, they were isolated from VOC service.